

## PATENT

impedance matching for said N-way RF switch according to the number of said N individual ports that are connected to said common port by said switch.

2. (Amended) An RF signal divider responsive to supplied control signals and operative to connect up to N individual RF ports to a common port, where N is an integer of 3 or more, in response to supplied control signals, said divider comprising:

as cont'd.  
a single pole, N-way RF switch for selectively connecting said N individual ports to a center conductor connected to said common port in response to switch drive signals;

a switchable reactive matching network having N-1 switch-selectable lossless matching elements operative to be connected to said center conductor of said RF switch in response to matching element drive signals; and

a driver circuit responsive to said control signals for providing said switch drive signals and for providing said matching element drive signals accordingly to the number of said N individual ports designated to be connected by said control signals.

3. (Amended) An RF signal divider comprising:

a plurality of N individual ports, where N is an integer of 3 or more, each having an inner conductor contact terminal extending into an RF switch cavity;

an RF common port;

a planar inner conductor in said switch cavity, connected to said RF common port at one end and having a switch contact at a second end;

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variable power output signal by selecting less than all of the four power amplifiers 16A, 16B, 16C and 16D for producing a combined output signal. In this case control logic 76 can control which of amplifiers 16A, 16B, 16C and 16D are to be activated and, accordingly, set the condition of divider 32 and combiner 32' using driver circuits 60. By control of the switching reeds 34 and the impedance matching reeds 37, 38 and 39, as shown in Figure 3, the number of output signals from the divider 14 or input signals to combiner 18 can be varied, while maintaining impedance match.

and  
cont'd.

[0034] As an additional feature, it is possible to provide a power amplifier system which will have a "fail soft" characteristic. Monitor couplers 72A, 72B, 72C and 72D are provided at the output of each individual amplifier 16A-D, and the monitor signal is provided to detectors 74. Control logic 76 responds to a failure of any of amplifiers 16 to discontinue operation of that amplifier, and reconfigure power divider 14 and power combiner 18 for operation with the remaining three amplifiers. Accordingly, the amplifiers continues to function with reduced power output.

**In the Claims:**

Please Amend the claims as follows:

- A5
1. (Amended) An RF signal divider, comprising a single-pole, N-way RF switch, where N is an integer of 3 or more, said switch being operable to connect up to N individual RF ports to a center conductor connected to a common port, and a switched reactive impedance matching network having at least N-1 switch-selectable lossless matching elements arranged to connect to said center conductor, said impedance matching network being arranged to provide selected

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a plurality of N switch reeds each moveable by an electro-magnet between a first position contacting said planar inner conductor and a second position spaced from said inner conductor;  
and

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cont'd. a switchable reactive impedance matching network, comprising N-1 lossless impedance matching reeds moveable by an electromagnet between a first position contacting said planar conductor and a second position spaced from said planar conductor.

Cancel claims 4 and 5 without prejudice.